WHAT IS CLAIMED IS:

1. A forward power converter, comprising:

an input voltage source;

a transformer having a primary winding and a secondary winding;

a primary circuit coupled to said primary winding;

a first MOSFET having a drain connected to a negative terminal of said secondary winding, wherein said first MOSFET has a source connected to a first terminal of a first resistor;

a second MOSFET having a drain connected to a positive terminal of said secondary winding, wherein said second MOSFET has a source connected to said source of said first MOSFET and a first terminal of a second resistor; and

a controller for generating a first output-control signal and a second output-control signal to synchronously control said first MOSFET and said second MOSFET.

2. The forward power converter as claimed in claim 1 further comprising:

an output inductor connected between said positive terminal of said secondary winding and an output terminal of the power converter;

an output capacitor having a positive terminal connected to said output terminal of the power converter and a negative terminal connected to the ground reference;

a detection diode coupled between said positive terminal of said secondary winding and a detection input of said controller; and

a programmable timing resistor.

3. The forward power converter as claimed in claim 1, wherein said primary circuit comprises:

a switching device for conducting a current from said input voltage source to said primary winding, wherein said primary winding conducts a current from said input voltage source to said primary winding only when said switching device is on; and

a switching signal generator for operating said switching device.

4. The forward power converter as claimed in claim 1, wherein said controller comprises:

a first comparator having a positive input connected to an anode of said detection diode, wherein said first comparator has a negative input connected to a first reference voltage terminal;

a second comparator having a negative input connected to said anode of said detection diode, wherein said second comparator has a positive input connected to a second reference voltage terminal;

a third comparator having a positive input connected to a second terminal of said first resistor, wherein said third comparator has a negative input connected to a second terminal of said second resistor;

a first current source connected between a supply voltage terminal and said positive input of said first comparator;

a second current source connected between the supply voltage terminal and said negative input of said third comparator; and

a third current source connected between the supply voltage terminal and said positive input of said third comparator.

5. The forward power converter as claimed in claim 1, wherein said controller further comprises:

a single-pulse generator for generating a single-pulse signal, wherein said

single-pulse generator has a first input connected to an output of said first comparator, wherein said single-pulse generator has a second input coupled to said programmable timing resistor;

a first flip-flop for providing said first output-control signal, wherein said first flip-flop has a first input connected to the supply voltage terminal, wherein said first flip-flop has a second input connected to the output of said first comparator;

a second flip-flop having a first input connected to the supply voltage terminal, said second flip-flop having a second input connected to an output of said second comparator;

a first NOT-gate for supplying a reset signal to a RESET-input of said first flip-flop, wherein said first NOT-gate has an input connected to said output of said second comparator;

a first AND-gate having a first input connected to an output of said single-pulse generator, wherein said first AND-gate has a second input connected to an output of said third comparator, wherein said first AND-gate has an output connected to a RESET-input of said second flip-flop; and

a second AND-gate for providing said second output-control signal, wherein said second AND-gate has a first input connected to said output of said single-pulse generator, wherein said second AND-gate has a second input connected to said output of said second comparator, wherein said second AND-gate has a third input connected to an output of said second flip-flop.

6. The forward power converter as claimed in claim 5, wherein said single-pulse generator comprises:

an operational amplifier having a positive input connected to a third reference

voltage terminal, wherein said operational amplifier has a negative input connected to said programmable timing resistor;

a third MOSFET having a gate connected to an output of said operational amplifier, wherein said third MOSFET has a source connected to said programmable timing resistor;

a current mirror,

a fourth current source connected in parallel with said current mirror; and

a fourth comparator having a negative input coupled to said fourth current source, wherein said fourth comparator has a positive input connected to a fourth reference voltage terminal.

7. The forward power converter as claimed in claim 5, wherein said single-pulse generator further comprises:

a delay circuit, wherein said delay circuit includes at least three NOT-gates connected in series to create a delay time, wherein an input of said delay circuit is coupled to said output of said first comparator;

a third AND-gate having a first input connected to an output of said delay circuit, wherein said third AND-gate has a second input connected to said input of said delay circuit;

a fourth MOSFET having a gate connected to an output of said third AND-gate, wherein said fourth MOSFET has a drain coupled to said negative input of said fourth comparator, wherein said fourth MOSFET has a source connected to the ground reference;

a fifth current source connected between said negative input of said fourth comparator and the ground reference; and

a capacitor coupled in parallel with said fifth current source.